

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

A.O.A., <i>et al.</i> ,)	
)	
Plaintiffs,)	Case No. 4:11-cv-00044-CDP
)	(CONSOLIDATED)
vs.)	
)	
THE DOE RUN RESOURCES)	
CORPORATION, <i>et al.</i> ,)	
)	
Defendants.)	

**DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION TO EXCLUDE
THE PROFFERED OPINION TESTIMONY OF PLAINTIFFS' EXPERT WITNESS
CLEMENTE VEGA, PSY.D. UNDER RULE 702 AND *DAUBERT***

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Defendants The Renco Group, Inc., The Doe Run Resources Corporation, D.R. Acquisition Corp., Doe Run Cayman Holdings LLC, Ira L. Rennert, Theodore P. Fox III, Marvin K. Kaiser, Jeffery L. Zelms, and Albert Bruce Neil (collectively “Defendants”), by and through undersigned counsel, file this Memorandum of Law in support of their motion to exclude the proffered opinion testimony of Plaintiffs’ expert witness, Clemente Vega, Psy.D., pursuant to Rule 702 of the Federal Rules of Evidence, and the principles set forth in *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993), and its progeny.

I. INTRODUCTION

Plaintiffs retained Dr. Vega, a Boston-based neuropsychologist who focuses on brain surgery and epilepsy, and who has evaluated in his practice *only three patients* with an identified history of lead exposure (Ex. A, 5/8/2019 Deposition of Dr. Clemente Vega, Psy.D., Vol. I (“Vega Dep. Vol. I”) at 67:15-22, 84:23-85:3), to interview the 16 Final Discovery Cohort Plaintiffs and one or both parents before administering each Plaintiff a day-long battery of cognitive and neuropsychological tests. From that work in 2016, and no follow up since, Dr. Vega diagnosed each of these 16 Plaintiffs with a variety of cognitive, neurodevelopmental, and behavioral issues (e.g., learning difficulties, Intellectual Disability, Attention Deficit Hyperactivity Disorder (“ADHD”), and Borderline Cognitive Function). Ultimately, Dr. Vega opines that all the aforesaid issues he diagnosed in Plaintiffs are injuries caused by exposure to lead specifically from Doe Run Peru’s (“DRP”) operations of the La Oroya Complex from October 1997 to June 2009.

Dr. Vega’s opinion testimony should be excluded in its entirety for several reasons. The most significant opinion Dr. Vega offers for purposes of Plaintiffs’ claims against Defendants (and on which both Dr. Karen Hopkins and Dr. Howard Hu rely for their medical causation opinions) is that exposure to lead reduced Plaintiffs’ intelligence. But to arrive at this opinion, Dr. Vega selected and administered to Plaintiffs an intelligence test (known as the Bateria III) that (1) is not

generally accepted in the medical and scientific literature as being used to evaluate lead's effects on one's intelligence, (2) is not applicable to the plaintiff population in this case, i.e., children and young adults native to Peru (much less the remote Central Andes region), and (3) has serious methodological flaws, rendering its results unreliable. Dr. Vega's use of this test resulted in Plaintiffs having artificially low intelligence scores; in other words, Plaintiffs appear far less intelligent and capable than they are.

As if this disservice to Plaintiffs was not enough, Dr. Vega further artificially reduces the appearance of Plaintiffs' intelligence by offering incredible conclusions about so-called "age and grade equivalence." For example, Dr. Vega concludes that a given Plaintiff, J.R.E.L., who was 16 years old and in tenth grade at the time of Dr. Vega's examination, was functioning "at a 9 year, 5-month-old level" and in some academic areas equivalent to someone in fourth or fifth grade. Ex. B, Expert Report of Dr. Vega for J.R.E.L. ("Vega J.R.E.L. Report") 2/18/2019 at 1,13,14. The reality is that since Dr. Vega's examination in 2016, J.R.E.L. went on to pursue university studies while also balancing full-time employment and the responsibilities associated with caring for his young child. Composite Ex. C, Individual Expert Reports of Dr. Gloria Morote ("Morote Reports") 11/26/2019, Report for J.R.E.L. ("Morote J.R.E.L. Report") 11/26/2019 at 5. As J.R.E.L.'s situation demonstrates, reliance on such "age/grade equivalency" scores is deeply flawed, as such scores are based on *U.S. standards* and are not generally accepted for evaluating individual intelligence.

That Dr. Vega's evaluations reflect artificially low measures of Plaintiffs' intelligence is clear for two reasons. First, when Defendants' expert neuropsychologist (who is Peruvian) administered a battery of tests (1) generally accepted in the medical and scientific community for evaluating lead's effects on intelligence and (2) appropriate for use with a Peruvian population,

Plaintiffs' intelligence scores were as much as **15-30 points higher** than as measured by Dr. Vega. See Composite Ex. C, Morote Reports 11/26/2019. An individual cannot perform better than his or her best on an intelligence measure but can always perform more poorly due to factors such as improper test selection and environmental conditions.

Second, Dr. Vega's results stand in stark contrast to Plaintiffs' real-world performance and accomplishments. Like J.R.E.L., all Plaintiffs are performing at their appropriate grade level in school and progressing through the Peruvian education system. Despite the fact that over 30% of individuals from La Oroya do not even graduate from secondary school,¹ all Plaintiffs over 18 have graduated from secondary school, are or have been enrolled in post-secondary school, and are otherwise obtaining varied employment. Ex. D, Appendix A of Expert Report of Dr. Gloria Morote ("Appendix A Morote Report") 11/26/2019 at 29. Indeed, while Dr. Vega assesses various Plaintiffs as having Borderline Intellectual Function,² in reality, those same Plaintiffs have pursued education at the **university level** in such fields as engineering and architecture, some while simultaneously maintaining substantial employment. In addition to J.R.E.L., other illustrative examples include:

- J.J.E.C. has been a student at the National University in Huancayo, Peru. He is pursuing a degree in architecture, is doing well in his current courses, and expects to graduate. Composite Ex. C, Morote Expert Reports, Report for J.J.E.C. ("Morote J.J.E.C. Report") 11/26/2019 at 5.

¹ See Ex. E Expert Report of Dr. Luis Martinez-Fernandez ("Martinez-Fernandez Report") 11/26/2019 at 16.

² Borderline Intellectual Function is a level of measured intellectual performance between average and significantly subaverage intelligence. It is most often associated with IQs in the range 70 to 75. <https://dictionary.apa.org/borderline-intelligence> (last visited 11/2/2021).

- G.C.S. graduated from secondary school and pursued two and a half years of training as a chef before enrolling at a private university where he earned a certificate in Administration. He reported working full-time at a local restaurant with both culinary and administrative responsibilities. Composite Ex. C, Morote Expert Reports, Report for G.C.S. (“Morote G.C.S. Report”) 11/26/2019 at 5-7.

In sum, Dr. Vega performed an assessment of Plaintiffs *designed* to make them appear less intelligent than they are, supported by cherry-picked facts from Plaintiffs’ academic records while ignoring or baselessly explaining away their real-world achievements.

The problems with Dr. Vega’s opinion testimony do not stop there. Rather than confine his testimony to neuropsychology, he veers into the fields of toxicology, epidemiology, and medicine, opining that every Plaintiff’s “neuropsychological sequelae and resultant impairments in cognitive, academic, behavioral, and emotional functioning identified in the current evaluation *are consistent with the known consequences of children exposed to lead*” and that “the lead emissions *from Defendants’ operations* directly contributed to *cause* the neuropsychological health problems identified in this examination.” *See, e.g.*, Ex. F, Expert Report of Dr. Vega for G.S.A.Y. (“Vega G.S.A.Y. Report”) 2/18/2019 at 16 (emphasis added). Not only is Dr. Vega entirely unqualified to offer such a causation opinion, but he employs no methodology whatsoever in arriving at such opinion. On the topic of general causation, i.e., whether lead exposure is capable of causing the at-issue “neuropsychological health problems,” his reports include no citations to or discussions of studies associating lead exposure with any of the cognitive or behavioral injuries he evaluates in the Plaintiffs, and he offers no analysis in support of such an opinion. Rather, he offers his mere say-so that lead exposure causes cognitive injuries, supported by a reference to general knowledge of lead literature and to Dr. David Bellinger’s report, another of Plaintiffs’

experts. He does not even apply any generally accepted methodology for leaping from a purported association in the literature to a causation assessment.

With regards to specific causation, i.e., that lead exposure caused Plaintiffs' various neurodevelopmental injuries, Dr. Vega employed no methodology at all. Rather, like another of Plaintiffs' experts, Dr. Karen Hopkins, he asks the Court merely to *assume* that he conducted the necessary differential diagnosis for ruling out potential contributing factors for Plaintiffs' alleged injuries, even when that analysis and discussion is wholly absent from his reports. Essentially, Dr. Vega's opinion simply is that because a Plaintiff was exposed to lead and has a condition such as ADHD, that lead caused that Plaintiff's ADHD. Or because a Plaintiff was exposed to lead, lead is responsible for her score on an intelligence test. But, of course, ADHD has many possible causes. And there are a host of factors that impact intelligence. It is wildly inappropriate for Dr. Vega to simply assume that lead exposure is the sole or even primary culprit.

Further, while not an environmental scientist, toxicologist, or metallurgist, and acknowledging that he has no specific knowledge regarding the identity of Defendants or the operation of the La Oroya Complex, Dr. Vega, like Dr. Hopkins, opines in each of his reports that it is specifically the lead emissions "*from Defendants' operations*" of the Complex that caused Plaintiffs' alleged neuropsychological health problems. Dr. Vega, however, does not offer any explanation as to how he identified lead from "Defendants' operations" as the primary contributing factor. Nor does he even have the qualifications to do so.

Dr. Vega's opinions are legally deficient in two additional respects. First, he goes on for multiple pages in his expert reports providing so-called "recommendations" he designed for each Plaintiff academically and/or behaviorally. But he admits that most of these suggestions are entirely impractical in La Oroya, he has done no work to determine whether they are realistic or

appropriate for Plaintiffs, and he has no plans to communicate these to Plaintiffs or help implement them in any way. Second, while knowing next to nothing about the Peruvian educational system or what employment opportunities exist in Peru, much less La Oroya, and having done little to no research or analysis into these issues, Dr. Vega offers the opinion that Plaintiffs would be “doing better” if not for their exposure to lead. Ex. A, Vega Dep. Vol I at 342:18-23. Not only is this opinion impermissibly vague, but it is wildly speculative and entirely unhelpful to the jury. Again, much like Dr. Hopkins, Dr. Vega makes no effort to, and indeed cannot, quantify, or even articulate, the purported damage lead had on each Plaintiff’s educational or employment performance or opportunities.

Accordingly, because Dr. Vega’s proffered opinions are unreliable and inadmissible within the meaning of Rule 702 and controlling case law, Defendants request that the Court exclude the proffered opinion testimony and preclude Dr. Vega from testifying at trial.

II. LEGAL STANDARD

Under *Daubert* and Federal Rule of Evidence 702, a federal district court has a *duty* to act as a “gatekeeper,” ensuring that only scientifically reliable and relevant expert evidence is presented to the jury. *Daubert*, 509 U.S. at 589. Rule 702 provides that “[a] witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.”

“The screening requirement of Rule 702 has been boiled down to a three-part test.” *Johnson v. Mead Johnson & Co., LLC*, 754 F.3d 557, 561 (8th Cir. 2014). “First, evidence based on

scientific, technical, or other specialized knowledge must be *useful* to the finder of fact in deciding the ultimate issue of fact. This is the basic rule of relevancy. Second, the proposed witness must be *qualified* to assist the finder of fact. Third, the proposed evidence must be *reliable* or trustworthy in an evidentiary sense, so that, if the finder of fact accepts it as true, it provides the assistance the finder of fact requires.” *Id.* at 561 (emphasis added). “The proponent of the expert testimony must prove its admissibility by a preponderance of the evidence.” *Redd v. Depuy Orthopaedics*, 700 F. App’x 551, 554 (8th Cir. 2017).

“To show that the expert testimony is relevant, the proponent must show that the reasoning or methodology in question is applied properly to the facts in issue.” *Marmo v. Tyson Fresh Meats, Inc.*, 457 F.3d 748, 758 (8th Cir. 2006); *see also Daubert*, 509 U.S. at 591-92 (“Rule 702’s ‘helpfulness’ standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.”); *Lauzon v. Senco Prods., Inc.*, 270 F.3d 681, 687 (8th Cir. 2001) (court must consider “whether the proposed expert sufficiently connected the proposed testimony with the facts of the case”). To satisfy the reliability requirement, the party offering the expert testimony must show by a preponderance of the evidence both that the expert is qualified to render the opinion and that the methodology underlying his or her conclusions is scientifically valid. *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 980 (8th Cir. 2010). “Failure to show the reliability of each step in an expert’s methodology is fatal under *Daubert*.” *In re Baycol Prod. Litig.*, 532 F. Supp. 2d 1029, 1042 (D. Minn. 2007). Moreover, “[e]xpert testimony that is speculative is not competent proof and contributes nothing to a legally sufficient evidentiary basis.” *J.B. Hunt Transp., Inc. v. GMC*, 243 F.3d 441, 444 (8th Cir. 2001).

In *Daubert*, “the Supreme Court set forth four factors to guide district courts in resolving admissibility questions: whether the expert’s methodology has been tested, has been subjected to

peer review, has a known or knowable error rate, and is generally accepted in the scientific community.” *Kirk v. Schaeffler Grp. USA, Inc.*, 887 F.3d 376, 391 (8th Cir. 2018); *see also Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999) (expanding the holding of *Daubert* to testimony based on “technical” and “other specialized” knowledge). “*Daubert*’s progeny provides additional factors such as: whether the expertise was developed for litigation or naturally flowed from the expert’s research; whether the proposed expert ruled out other alternative explanations; and whether the proposed expert sufficiently connected the proposed testimony with the facts of the case.” *Lauzon*, 270 F.3d at 687. In weighing these factors, the court properly exercises its gatekeeping function by “separat[ing] expert opinion evidence based on ‘good grounds’ from subjective speculation that masquerades as scientific knowledge.” *Glastetter v. Novartis Pharm. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001). “An expert’s opinion is subject to being rejected if it is substantially based upon the expert’s subjective belief or unsupported speculation.” *Lawn Managers, Inc. v. Progressive Lawn Managers, Inc.*, No. 4:16 CV 144 DDN, 2017 WL 4685245, at *2 (E.D. Mo. Sept. 28, 2017). Moreover, while a court focuses on an expert’s principles and methodology, “expert conclusions may also factor into the admissibility calculus.” *Id.* For example, a court may, in its discretion, conclude that there is “simply too great an analytical gap” between a proffered opinion and the data in a case, as it is not required “to admit opinion evidence that is connected to existing data only by the ipse dixit of the expert.” *Id.* (quoting *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997)). Indeed, “an expert’s methodology must be reliable at every step of the way,” and in determining whether a step in a given expert’s analysis is unreliable, “the district court should undertake a *rigorous examination* of the facts on which the expert relies, the method by which the expert draws an opinion from those facts, and how the expert applies the facts and methods to the case at hand.” *In re Mirena IUS Levonorgestrel-Related Prod. Liab.*

Litig. (No. II), 982 F.3d 113, 123 (2d Cir. 2020) (emphasis in original) (quotation marks omitted) (determining that “not only was it appropriate for the district court to take a *hard look* at plaintiffs’ experts’ reports, the court was *required* to do so to ensure reliability.”) (emphases added).

Defendants respectfully submit that the exercise of the Court’s gatekeeping role is particularly warranted in this case as Dr. Vega’s proffered opinions do not meet the relevancy and reliability requirements as outlined by Rule 702 and controlling case law.

III. **ARGUMENT**

A. **Dr. Vega’s Diagnoses From Neuropsychological Testing Administered to Plaintiffs Are Unreliable**

In establishing the reliability of an expert’s testimony, the court’s gatekeeping function under *Daubert* serves “to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Kuhn v. Wyeth, Inc.* 686 F.3d 618, 625 (8th Cir. 2012) (quoting *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 152 (1999)). Here, Dr. Vega fails to follow the standards for selecting, administering, and interpreting cognitive and neuropsychological tests *that he purports to follow in his clinical practice*, as well as those generally accepted in the field of neuropsychology.

1. **Basics of neuropsychological assessment**

A neuropsychological assessment is an “evaluation of the presence, nature, and extent of brain damage or dysfunction derived from the results of various neuropsychological tests.”³ These tests include clinical instruments measuring memory, language, learning, and attention, among

³ American Psychological Association, *APA Dictionary of Psychology*, <https://dictionary.apa.org/neuropsychological-assessment> (last visited 11/2/2021).

other functions.⁴ In effecting a proper assessment, ethical principles of the profession demand that “[p]sychologists use assessment instruments *whose validity and reliability have been established for use with members of the population tested.*”⁵ Further, when interpreting test results, psychologists *must* “take into account the purpose of the assessment as well as the various test factors, test-taking abilities, and other characteristics of the person being assessed, such as situational, personal, linguistic, and cultural differences, that might affect psychologists’ judgments or reduce the accuracy of their interpretations.”⁶

Accordingly, when selecting specific tests, psychologists identify instruments that have an “appropriate normative comparison” to the population they are evaluating, recognizing the importance of such factors as age, gender, culture, and language.⁷ A “norm” is a standard or range of values that represents the typical performance of a group or of an individual against which comparisons can be made.⁸ In other words, the expectation is that the test-taker’s scores will be compared to a population that most closely resembles the test subject, including with respect to culture. In a toxic tort case such as this, the “normative population” would include those of similar age, gender, culture, and language to the plaintiff but without exposure to the at-issue substance, here, lead. Further, it is understood that the test instruments utilized by psychologists are not “singular measures,” but rather are to be integrated with other data points, including clinical

⁴ *Id.* at <https://dictionary.apa.org/neuropsychological-tests> (last visited 11/2/2021).

⁵ American Psychological Association, *Ethical Principles of Psychologists and Code of Conduct*, §9.02 Use of Assessments (2017), at <https://www.apa.org/ethics/code> (emphasis added).

⁶ *Id.* at § 9.06 Interpreting Assessment Results.

⁷ American Psychological Association, *Guidelines for Psychological Assessment and Evaluation*, Guideline 8 (March 2020), <https://www.apa.org/about/policy/guidelines-psychological-assessment-evaluation.pdf>.

⁸ American Psychological Association, *APA Dictionary of Psychology*, <https://dictionary.apa.org/norm> (last visited 11/2/2021).

interviews and collateral information regarding the individual, such as real-world achievement, to fully assess his or her cognitive capacity.⁹ Thus, test scores must be put into context using multiple data points that reflect the individual's background, influential factors, and population-specific contributions.¹⁰ It would be inappropriate, for example, to compare individuals from a developing country to a normative group from the United States or Western Europe.

These guiding principles are especially crucial when assessing an individual's cognitive capacity because there are numerous significant factors that can impact intelligence. These factors include, but are not limited to, genetics, parental IQ, quality of one's home environment, poverty, quality of school and community, cultural beliefs, level of caregiving and social support, parental education, level of nutrition, and medical care. *See* Ex. D, Appendix A Morote Report 11/26/2019 at 12-14.

Indeed, one of Dr. Vega's own stated "Objectives" in this case was "[t]o select a battery that ensured objectivity, reliability, and validity in testing results by accounting for linguistic and cultural diversity factors of individuals examined." *See, e.g.,* Ex. F, Vega G.S.A.Y. Report 2/18/2019 at Appendix A, p.1. To this end, Dr. Vega recognizes that appropriate and applicable normative standards are essential to evaluate reliably the results of neuropsychological tests, as it is generally accepted that cultural differences between populations can impact the results of neuropsychological tests. Ex. G, 5/9/2019 Deposition of Dr. Clemente Vega, Psy.D, Vol II ("Vega Dep. Vol. II") at 402:2-403:21. He also agrees with guidelines promulgated by the American Educational Research Foundation, the American Psychological Association, and the National

⁹ American Psychological Association, *Guidelines for Psychological Assessment and Evaluation*, Guideline 1 (March 2020) <https://www.apa.org/about/policy/guidelines-psychological-assessment-evaluation.pdf>.

¹⁰ *Id.* at Guideline 7.

Council on Measurement in Education – authoritative organizations in his field – which emphasize that “[t]ests selected for use in psychological testing should be suitable for the characteristics and background of the test taker” and “[t]he professional should also take into account the availability of norms and evidence of validity for a population representative of the test taker.” *See* Ex. H, relevant pages from American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (Eds.), *Standards for educational and psychological testing* (2014) (“*AERA Standards*”) at 165; *see also* Ex. G, Vega Dep. Vol. II at 423:16-426:4. Indeed, Dr. Vega agrees that “[d]iagnostic conclusions based on test performance of non-English speakers may be highly inappropriate, particularly if there are no demographically adequate normative data available.” Ex. G, Vega Dep. Vol. II at 410:19-411:1.

2. Dr. Vega’s test selection yielded unreliable and irrelevant results

Despite acknowledging these principles for neuropsychological testing, the testing Dr. Vega employed in these cases did not have appropriate normative groups by which to measure Plaintiffs’ performance and, as a result, yield unreliable results that should be kept out of the courtroom. Dr. Vega chose to administer to Plaintiffs the Bateria III to measure each Plaintiff’s General Intellectual Ability (“GIA”). Dr. Vega also administered other neuropsychological tests to assess specific areas of function, including memory, verbal fluency, attention, visual-motor integration, learning, and behavior. The administration of these tests varied among the Plaintiffs based on age at the time of testing and these specific tests are identified in each of his reports for the individual Plaintiffs. These tests, however, were *not normed to a group comparable to Plaintiffs’ circumstances*.

Plaintiffs are Peruvian, having been born, and in most instances raised, in La Oroya, a town in the Andean Highlands at an altitude of over 12,000 feet.¹¹ They live in homes where, although they speak Spanish, they speak a dialect known as “Andean Spanish,” which has distinct pronunciation characteristics and is influenced by the indigenous Quechua language. *See* Ex. D, Appendix A Morote Report 11/26/2019 at 4. While the reference group for the Batería III from which the normative comparisons are derived included some individuals from Spanish-speaking countries, ***it did not include individuals living in Peru***. And of the 1,413 individuals included in the reference group, ***less than 8 individuals were even born in Peru***, and ***all of them resided in the United States***, where they inherently had a bilingual environment. *See* Ex. J, Schrank, F.A., et al. (2005). *Batería III Woodcock-Muñoz: Assessment service bulletin number 1, overview and technical supplement*. Itasca, IL: Riverside Publishing at 14. Most of the other tests Dr. Vega administered to Plaintiffs also lacked normative data for Peruvians, and none had such data for individuals under age 18. *See* Ex. G, Vega Dep. Vol. II at 421:17-422:19.

As a result, ***Dr. Vega has no measure of how non-lead-exposed individuals in a similarly-situated community in Peru – the relevant comparator group – perform on the same battery of tests***. Without an appropriate comparison group, Dr. Vega’s results cannot reliably reflect the cognitive and behavioral function of any of the Plaintiffs. Indeed, when “no normative or validity studies are available for a relevant population, test interpretation should be ***qualified and presented as hypotheses rather than conclusions***.” *AERA Standards* at 165 (emphasis added). Dr. Vega, however, did exactly the opposite, instead offering misplaced conclusions:

Q: And is it fair to say that in your reports in this case you present no interpretations as mere hypotheses, ***you present them all as conclusions, correct?*** To a reasonable degree of neuropsychological certainty...

¹¹ Cognitive development can be impacted by growing up at high altitude. *See* Ex. I, Expert Report of Dr. William Banner for J.J.E.C. 11/26/2019 at 17.

A: *That's correct.*

Ex. G, Vega Dep. Vol. II at 425:16-426:4 (emphases added).

The issues with Dr. Vega's test selection do not stop there. Critically, Dr. Vega failed entirely to account for various other serious weaknesses and flaws in the Bateria III. The Bateria III consists of various subtests that are then utilized to calculate an individual's GIA. The raw data from Dr. Vega's testing reveals that all Plaintiffs scored quite poorly on one particular subtest, known as the *Visual Auditory Learning* subtest. *Id.* at 520:16-521:3; Ex. D, Appendix A Morote Report 11/26/2019 at 8. Just like how a test that all the students fail says more about the teacher than the students, these results should be a red flag for any neuropsychologist, because it demonstrates that an aspect of the test is not an appropriate instrument to evaluate this population. Nonetheless, Dr. Vega never further examined this issue to determine whether there could be a cultural or language concern with this portion of the test that is driving down Plaintiffs' GIA scores. *Nor did he even make mention of this issue in his reports.* And, unbelievably, he was completely unaware that this particular subtest has, in fact, since been removed from the calculation of an individual's GIA score in a newer version of the test. Ex. G, Vega Dep. Vol. II at 521:4-7.

Dr. Vega attempts to support his selection of the Bateria III by citing to interviews he conducted with education and healthcare personnel in the La Oroya area, stating that "[i]n order to account for 'fairness in testing' as recommended by the ITC [International Test Conference], the test battery was selected following several in-person interviews with healthcare providers (primary care physician, nurse practitioner, school psychologist, etc.) and educational specialists (e.g., school administrators and teachers) that were currently working in the local medical clinic and schools within the affected area, La Oroya, Peru." *E.g.*, Ex. F, Vega G.S.A.Y. Report 2/18/2019, at Appendix A, p. 1. But these interviews are nothing more than window dressing.

While his reports include summaries of these meetings, they offer no explanation or rationale for his methodology other than conclusory statements such as “[c]onsequently, the comparison between the battery of tests selected and academic curriculum was deemed appropriate” regarding any of the summarized interviews. *Id.* at Appendix A, p. 2. And while Dr. Vega discusses what he learned from these meetings, he provides no explanation as to how these interviews with these various individuals, some of whom requested not to be identified by name,¹² supported his decision to select the battery of neuropsychological tests he administered to Plaintiffs or how they led him to conclude that his selections were appropriate. In other words, Dr. Vega fails to demonstrate how he relied upon his interviews in La Oroya to aid in his test selection for Plaintiffs, if at all. Because Dr. Vega cannot demonstrate that he relied on these interviews in any meaningful way, any reference to the interviews should be excluded.

That Dr. Vega’s work yielded unreliable results is apparent when looking at the results of the intelligence test administered by Defendants’ expert neuropsychologist, Dr. Gloria Morote, a native of Peru. Dr. Morote administered the Wechsler intelligence scales to obtain an “IQ” score for each Plaintiff. “IQ” is the measurement of intelligence that appears in the literature assessing lead’s potential impact on cognition, and the Wechsler scales often are utilized to obtain such a measurement. *See, e.g.,* Ex. K, Report of Dr. Barbara Beck (“Beck Report”) 11/26/2019 at 15. As reflected in the chart below, the IQ scores from Dr. Morote’s assessments are, on average, about 25% higher (range 4%-32%) than Dr. Vega’s GIA scores¹³ and generally are commensurate with the Plaintiffs’ academic achievement and real-world accomplishments, as outlined in Dr. Morote’s

¹² While Plaintiffs’ counsel ultimately identified the individuals interviewed by Dr. Vega, they declined to make them available for deposition or put Defendants in touch with them.

¹³ “IQ” scores obtained from administration of the Wechsler intelligence tests and the “GIA” scores from the Bateria III both utilize scales for cognitive function that have a mean of 100 and a standard deviation of 15. *See* Ex. D, Appendix A Morote Report 11/26/19 at 10; *see also* Ex. F, Vega G.S.A.Y. Report 2/18/2019 at 7.

reports:

Plaintiff	Wechsler IQ	Batería III GIA	Score Difference on Wechsler
G.S.A.Y.	96	79	+17
S.R.B.C.	81	65	+16
G.C.S	95	77	+18
N.K.C.V.	92	77	+15
J.R.E.L.	100	72	+28
R.L.E.Y.	91	73	+18
J.J.E.C.	102	76	+26
D.F.G.C.	87	83	+4
Y.Y.H.E.	107	82	+25
A.T.M.C.	100	89	+11
M.X.O.R.	75	43	+32
E.E.P.S.	100	87	+13
D.D.P.S.	84	70	+14
J.R.R.B.	85	70	+15
W.F.T.P.	104	81	+23
R.A.Y.A.	97	78	+19

See generally Morote Expert Reports 11/26/2019.

Dr. Vega deviated from his own stated “objectives” and the accepted methodology for selecting a reliable measure of Plaintiffs’ cognitive and behavioral function. His opinions based on those results are entirely unreliable and inadmissible. *See Junk v. Terminix Int’l Co.*, 628 F.3d 439, 448 (8th Cir. 2010) (holding that the expert’s “failure to follow his own general practice and his reliance on unfounded assumptions in his comparative method created ‘too great an analytical gap’ between his opinion and the data on which it relied”) (quoting *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997)).

3. **Dr. Vega ignores Plaintiffs’ real-world achievements, which contradict his testing results and underscore the lack of reliability and objectivity in his results**

Under generally accepted neuropsychological testing guidance, when interpreting test data, an examiner must consider all aspects of the tested individual’s performance and integrate data from collateral sources and environmental context in drawing conclusions. *See* American Psychological Association, *Guidelines for Psychological Assessment and Evaluation* at Guideline 1 (March 2020). Consistent with these standards, Dr. Vega testified that when evaluating the results of neuropsychological testing, “there’s always a comparison of all the measures, IQ and academic achievement, absolutely.” Ex. L, 5/10/2019 Deposition of Dr. Clemente Vega, Psy.D., Vol. III (“Vega Dep. Vol. III”) at 748:3-5. But Dr. Vega entirely ignores significant facts relating to Plaintiffs’ real-world achievement – a failure that calls into question his interpretation of the results of his cognitive testing and demonstrates that he did not utilize a generally-accepted and reliable methodology.

When confronted with glaring discrepancies between Plaintiffs’ GIA scores and their real-world academic performance or achievements in schooling or vocation, Dr. Vega either ignores or attempts to explain away the contradictory findings. He never even considers the possibility that some of the test scores he obtained may not be an accurate reflection of Plaintiffs’ cognitive abilities. Instead, for many Plaintiffs, Dr. Vega’s reports contain the following conclusory statement based solely on *ipse dixit*: “Test results show performance on academic tasks that is commensurate with [plaintiff’s] cognitive capacity.”¹⁴ *E.g.*, Ex. M, Expert Report of Dr. Vega for J.J.E.C.(“Vega J.J.E.C. Report”) 2/18/2019 at 6. Dr. Vega’s work in this respect bears the hallmark

¹⁴ Dr. Vega’s Expert Report for J.J.E.C. presents a GIA score in the Borderline range for cognitive function while the majority of his Academic Achievement scores range from Average to Superior. *See* Ex. M, Vega J.J.E.C. Report 2/18/2019 at 5-6.

characteristics of an advocate piece based on junk science, rather than the work of a true scientist utilizing a reliable methodology. *See Hoffman v. Monsanto Co.*, 2:05-cv-00418, 2007 WL 2984692, at *3 (S.D. W.Va. Oct. 11, 2007) (when experts “have developed their opinions expressly for purposes of testifying,” it casts doubt upon the reliability of their testimony).

For example, when asked how R.A.Y.A., whom Dr. Vega diagnosed with ***borderline intelligence***, was performing almost completely in the average range across all academic areas, Dr. Vega offered without any basis or explanation that some occasional tutoring must explain the academic achievement despite the low cognitive capacity. Ex. L, Vega Dep. Vol. III at 749:14-753:25. Dr. Vega’s failure to acknowledge Plaintiffs’ real-world accomplishments is also clear in his assessment of J.J.E.C. Dr. Vega opined that J.J.E.C. has borderline intelligence, but J.J.E.C. has been ***pursuing a degree in architecture at the Universidad Nacional del Centro de Peru in Huancayo***. *See* Composite Ex. C, Morote Expert Reports, Morote J.J.E.C. Report 11/26/2019 at 5. When asked whether he had ever encountered a patient in his clinical practice who had scored so low in general cognitive ability yet was attending college and pursuing such a degree, Dr. Vega defended his position by stating that he has had patients of borderline intelligence who attend college in the United States with academic support. *See* Ex. L, Vega Dep. Vol. III at 938:7-944:6. But when then questioned about whether J.J.E.C. was receiving academic support, Dr. Vega pivoted to discuss the differences between entrance exam skill requirements for architecture and those of civil engineering (a program J.J.E.C. pursued initially) and avoided responding to whether or not J.J.E.C. had received support in college (or even whether he had inquired about it). *Id.* at 944:7-946:10. Notably, however, Dr. Vega testified that he was “not familiar ... with the exams” and had done no investigation to ascertain the necessary information regarding the entrance exams or level of difficulty of J.J.E.C.’s program of study. *Id.* The reality is that university admission is

very competitive and selective in Peru with only about 50% of students passing required entrance exams.¹⁵ See Ex. E, Martinez-Fernandez Report 11/26/2019 at 13. This is just one of many examples of Dr. Vega's *ipse dixit*-based testimony, which renders his opinions regarding J.J.E.C.'s diagnosis of borderline cognitive ability inherently unreliable and based on a biased and incomplete assessment.

When confronted with similar evidence that the academic achievement and performance of other Plaintiffs was in stark contrast to the low cognitive capacity scores in his assessments, Dr. Vega would not even entertain the idea that his test results may not accurately reflect Plaintiffs' true cognitive capacity. Instead, Dr. Vega provided the following nonsensical explanation: "part of the explanation for an IQ score being lower, but the academic achievement scores being higher, that's not an issue with the test. That's an issue with the etiology...Well, lead - it's part of that." Ex. L, Vega Dep. Vol. III at 760:10-761:13. For Dr. Vega, lead is to blame for everything, even the inability of his tests to accurately measure Plaintiffs' intellectual abilities. ***Dr. Vega simply ignores data that is contrary to his preconceived opinions and cannot explain the inconsistencies in the results of his assessments when confronted with the incontrovertible facts of Plaintiffs' real-life achievements and successful academic performance.*** This is wholly impermissible. See *In re Mirena IUS Levonorgestrel-Related Prod. Liab. Litig.*, 341 F. Supp. 3d 213, 260 (S.D.N.Y. 2018), *aff'd sub nom. In re Mirena IUS Levonorgestrel-Related Prod. Liab. Litig. (No. II)*, 982 F.3d 113 (2d Cir. 2020) (excluding plaintiffs' experts' testimony because *Daubert* does not allow "conclusion-driven" analysis).

In addition to ignoring significant collateral data and context that would call his test scores

¹⁵ By comparison, nearly 70% of high school students in the U.S. enroll in college in 2018. See Nat'l Ctr. for Educ. Statistics, *Immediate transition to college*, at <https://nces.ed.gov/fastfacts/display.asp?id=51> (last visited 11/8/2021).

into question, Dr. Vega even disregards red flags that suggested he may have invalid results during the scoring of his tests:

- Q. Okay. And this says: “The number of omission errors made by the respondent is highly unusual;” do you see that?
- A. Yes.
- Q. “Although such a high number of omissions may indicate a clinical impairment, there are other possibilities that may relate to the validity of the test;” do you see that?
- A. Yes.
- Q. “For example, the respondent may have been fatigued, misunderstood the instructions, or lacked the motivation to respond with full effort.” Did I read that correctly?
- A. Yes.
- Q. And then ... it says: “Observations made of the respondent during the administration, as well as other data regarding the respondent, will help in assessing the validity of the administration. Also note that one or more scores could not be completed due to too few hits. The respondent may have disengaged from the task for a significant period of time during the administration. As a result, some interpretive text may be unavailable.” Did I read that correctly?
- A. Yes.
- Q. It says: “Readministration of the Conners CPT 3 is strongly recommended;” do you see that?
- A. Yes.
- Q. None of that’s included in your report, correct?
- A. None of what?
- Q. Anything that’s in that paragraph.
- A. Other than scores, none of –
- Q. Right.

Ex. G, Vega Dep. Vol. II at 564:14-565:25.

Dr. Vega’s failure to adhere to the proper methodology for interpreting test data – including

his deliberate failure to resolve inconsistencies in the testing and to consider Plaintiffs' real-life academic achievements – demonstrates that his opinions regarding Plaintiffs' cognitive function and abilities are “conclusion-driven” and unreliable.

4. **Dr. Vega inappropriately proffers age and grade equivalencies to further diminish Plaintiffs' level of cognitive function**

Dr. Vega's reports also include conclusory, standalone statements like: Plaintiff's “overall cognitive ability is below age expectations and is in the Borderline range on the basis of a standardized intellectual battery.” *E.g.*, Ex. B, Vega J.R.E.L. Report 2/18/2019 at 13. As discussed *supra* at Section I., p. 2, Dr. Vega concluded from his test results that 16-year-old J.R.E.L. was functioning “at a 9 year, 5-month-old level.” *Id.* at 13. Further, he assessed that his “academic development also appears to be below age expectation, with academic skills estimated to be between a sixth and seventh grade level. His functional capacity for more advanced academic skills, such as reading comprehension and written language expression, are even further depressed – estimated to be at fifth and fourth grade levels, respectively.” *Id.* at 14. J.R.E.L.'s subsequent real-world accomplishments, which include attending university, maintaining a full-time job, and caring for his young daughter, among other things, belie this grossly exaggerated finding.

Another illustrative example is N.K.C.V., who Dr. Vega claimed was functioning at a 7 year, 11-month-old level and between a third and fifth grade level, despite being 11 years and 7 months old (and attending seventh grade) at the time of his testing in 2016. Ex. N, Expert Report of Dr. Vega for N.K.C.V. (“Vega N.K.C.V. Report”) at 1, 14. In reality, N.K.C.V. completed her primary school education that same year without repeating any grades and with high grades throughout the duration – earning a combination of “As” and “ADs” every year in her courses. PLF-892D-NKCV-0092; PLF-892D-NKCV-0387-89; PLF-892D-NKCV-0636. In 2017, she was second overall in her grade in secondary school (Ex. O, 6/22/17 Deposition of N.K.C.V.

(“N.K.C.V. Dep.”) at 29:2-4) and had aspirations of attending university to become a doctor (*id.* at 14:7-10, 19-20)—a goal her father fully believes she can accomplish. Ex. P, 6/21/17 Deposition of Father of N.K.C.V. (“N.K.C.V. Father Dep.”) at 82:5-9. When interviewed in 2019 by Defendants’ experts, she reported continued positive academic performance and being on track to graduate high school in two years, before moving on to a career in nursing. Composite Ex. C, Morote Expert Reports, Report for N.K.C.V. (“Morote N.K.C.V. Report”) 11/26/2019 at 4, 17. As J.R.E.L.’s, N.K.C.V.’s, and other Plaintiffs’ actual life situations demonstrate, this type of demeaning, misleading testimony about Plaintiffs’ level of cognitive functioning should be excluded.

Unsurprisingly, it is generally accepted in the medical, scientific, and educational communities that utilizing age and/or grade equivalencies to characterize an individual’s level of cognitive functioning is grossly misleading and not useful. *See* Ex. D, Appendix A Morote Report 11/26/2019 at 20-22. Even Dr. Vega agreed on deposition that age and grade equivalency scores have ***inherent problems*** with reliability and validity and that standard scores are a better representation of an individual’s cognitive ability. Ex. G, Vega Dep. Vol. II at 533:3-534:5. He also concedes these data points can be misleading when presented in “isolation.” *Id.* at 544:15-21.

Dr. Vega should not be permitted to deviate from accepted standards in his profession by presenting selective age and grade equivalency data to the jury. Not only is Dr. Vega’s sporadic and inconsistent inclusion of age and grade equivalencies in his reports contrary to well-accepted standards, but his opinions are even more unreliable because they are ***based on age/grade equivalency data from a population in the United States***, without any accompanying analysis to demonstrate that such values accurately reflect the educational framework in Peru or are an

appropriate comparison for Plaintiffs. *Id.* at 530:13-23. In fact, they are not. *E.g.*, Ex. E, Martinez-Fernandez Report 11/26/2019 at 17-19.

Expert testimony is inadmissible when it is excessively speculative or unsupported by sufficient facts. *Onyiah v. St. Cloud State Univ.* 684 F. 3d 711, 710 (8th Cir. 2012) (quoting *Barrett*, 606 F. 3d at 981); *see also Marmo*, 457 F.3d at 757 (“Expert testimony is inadmissible if it is speculative, unsupported by sufficient facts, or contrary to the facts of the case.”). Here, Dr. Vega’s opinions regarding age and grade equivalencies should be excluded as they are based on improper methodology, and are entirely speculative, misleading, and of no use to the fact finder. Allowing Dr. Vega to testify about the individual Plaintiffs’ age and/or grade equivalencies would be highly misleading and extremely prejudicial. FED. R. EVID. 403.

B. Dr. Vega’s Opinion That Lead Exposure Caused Plaintiffs’ Cognitive and Behavioral Injuries Is Unreliable

Dr. Vega opines not only that each Plaintiff has certain cognitive and behavioral deficits, but that those deficits were caused by his or her exposure to lead. In a toxic tort case, proof of causation requires a showing of both general causation, “that the alleged toxin is capable of causing injuries like that suffered by the plaintiff in human beings subjected to the same level of exposure as the plaintiff; and specific causation, that the toxin was a cause of the plaintiff’s injury.” *Mattis v. Carlon Elec. Prod.*, 295 F.3d 856, 860 (8th Cir. 2002). Without first demonstrating general causation, one cannot offer an opinion on specific causation (that lead caused Plaintiffs’ cognitive and behavioral maladies). *See Brumbaugh v. Sandoz Pharm. Corp.*, 77 F. Supp. 2d 1153, 1155, n. 1 (D. Mont. 1999) (noting that specific causation is only material “if plaintiff can demonstrate general causation between Parlodel and her injury”).

Dr. Vega’s causation opinions are inadmissible on multiple levels. For starters, Dr. Vega is wholly unqualified to offer any causation opinion. But even putting that aside, Dr. Vega fails to

follow any discernible methodology in arriving at his causation opinions, both general and specific. Put simply, Dr. Vega's "methodology" in arriving at his causation opinions is: (1) literature shows lead is *associated* with certain cognitive and behavioral deficits; (2) he has diagnosed cognitive and/or behavioral deficits in each Plaintiff based on his neuropsychological testing; (3) Plaintiffs have been exposed to lead based on measured blood lead levels or another of Plaintiff's experts modeling; and (4) therefore lead exposure caused each of Plaintiffs' injuries. This type of syllogism is insufficient to prove causation. *See, e.g., Amorgianos v. National Railroad Passenger Corp.*, 137 F.Supp.2d 147 (E.D.N.Y. 2001) ("Even when an appropriately designed study yields evidence of a statistical association between a given substance and a given health outcome, epidemiologists generally do not accept such an association by itself as proof of a causal relationship between the exposure and the outcome . . . [and instead] generally look to [the Bradford Hill] criteria to determine whether a statistical association is indeed causal.") (emphasis added.) In fact, Dr. Vega does not even know the difference between general causation and specific causation, often conflating them in his analysis:

Q: And when you say [lead is] sufficient to cause [Plaintiffs' injuries], that doesn't mean it did. It just means that it had the capability of causing. That—that sentence in isolation.

A: So that—that's that—that sentence means this level is known to be associated with really significant impact, and that's what we're seeing. That's right.

* * *

A: So when we're talking about reasonable degree of neuropsychological certainty, the threshold that I'm using is—is looking at the available data and—and the relationship between that. So there's a —the exposure was—was sufficient to cause what —what I'm seeing as the problem.

Ex. L, Vega Dep. Vol. III at 850: 6-13, 850:19-24.

1. Dr. Vega lacks the necessary qualifications and expertise to offer causation opinions

For an expert's testimony to be admissible, the proposed expert must first be qualified to assist the fact finder. Fed. R. Evid. 702; *Johnson*, 754 F.3d at 561. Dr. Vega, however, has no qualifications or expertise to offer either a general or specific causation opinion. He is not an epidemiologist or toxicologist. Ex. A, Vega Dep. Vol. I at 91:5-24. Nor is he a medical doctor. *Id.* And not being a medical doctor, he is wholly unqualified to offer medical causation opinions. *See, e.g., In re Viagra Prods. Liab. Litig.*, 658 F. Supp. 2d 950, 960 (D. Minn. 2009) (holding that epidemiologist was not qualified to offer a specific causation opinion that Viagra caused the plaintiff's vision loss because he was "not a medical doctor"). Indeed, Dr. Vega has practically no experience with lead-exposed patients, having evaluated only three patients during his career with any identifiable history of lead exposure. Ex. A, Vega Dep. Vol. I at 67:15-22. And none of his patients over the course of his professional career resemble Plaintiffs in these cases. He has had no patients who are indigenous Peruvians, none that have lived at similar altitudes, none that have resided in or near a smelting community, and none who had similar living conditions to some of the Plaintiffs, such as a lack of indoor plumbing. *See* Ex. L, Vega Dep. Vol. III at 998:8-999:21. Dr. Vega has no publications, presentations, research, or writings specific to lead exposure and its consequences or for any other neurotoxin for that matter. *See* Ex. A, Vega Dep. Vol. I at 84:6-22. Simply put, being a psychologist who speaks Spanish is not enough to be an expert on lead's potential impacts on health.

2. Dr. Vega employs no discernible methodology in arriving at his general causation opinions

Even if Dr. Vega were qualified to testify regarding the possible health effects of lead exposure, he employs no methodology at all in reaching conclusions about the ability of lead to affect cognitive function. He relies only on a general knowledge of the literature as part of his

“training” and on the report of another Plaintiffs’ expert, Dr. Bellinger.¹⁶ See Ex. A, Vega Dep. Vol. I at 47:4-21. In his reports, Dr. Vega cites to **zero** studies regarding lead exposure and purported cognitive or behavioral effects. And he offers no documented analysis of how he arrives at his conclusion that Plaintiffs’ alleged injuries are consistent with “the known consequences of children exposed to lead.” *E.g.*, Ex. F, Vega G.S.A.Y. Report 2/18/2019 at 16.

This lack of work runs contrary to the well-established requirement that an expert’s opinions must be based on “some recognized scientific method.” *Clark v. Takata Corp.*, 192 F.3d 750, 759 n.5 (7th Cir. 1999). Further, an expert must base his opinion upon his own application of principles within his expertise to the case facts. *Hill v. Fikes Truck Line, LLC*, No. 4:11-CV-816, 2012 WL 5258753, at *3 (E.D. Mo. Oct. 24, 2012) (citing *Quiles v. Bradford–White Corp.*, 2012 WL 1355262, at *7 (N.D.N.Y. Apr. 18, 2012)). And, Dr. Vega’s failure to document any work he may have done in his report violates Rule 26(a)(2)(B), which requires that an expert report contain “‘a complete statement of all opinions to be expressed and the basis and reasons therefore’ and ‘the data or other information considered by the witness in forming the opinions.’” *Mems v. City of St. Paul, Dept. of Fire and Safety Servs.*, 327 F.3d 771, 780 (8th Cir. 2003) (affirming exclusion of expert testimony where report did not contain a complete statement of all opinions); *see also Ciomber v. Coop. Plus, Inc.*, 527 F.3d 635, 641 (7th Cir. 2008) (expert’s report “must include the ‘how’ and ‘why’ the expert reached a particular result, and not merely the expert’s conclusory opinions”).

Nor does Dr. Vega do any work to leap from a reported **association** between lead exposure and cognitive injury in the literature to **causation**. The generally accepted methodology for

¹⁶ Of note, the literature cited by Dr. Bellinger assesses the “IQ” of individuals, a different measurement than that utilized by Dr. Vega, who assessed each Plaintiff’s GIA.

evaluating whether an association is causal is application of the Bradford-Hill criteria.¹⁷ See REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (3d ed. 2011), pp. 597-600; *see also Gannon v. United States*, 292 F. App'x 170, 173 n. 1 (3d Cir. 2008) (“Bradford Hill criteria are broadly accepted criteria for evaluating causation”); *In re Avandia Mktg., Sales Practices and Prods. Liab. Litig.*, 2011 WL 13576, at *3 (E.D. Pa. Jan. 4, 2011) (“Bradford–Hill criteria are used to assess whether an established association between two variables actually reflects a causal relationship.”).

But Dr. Vega does not even know what the Bradford-Hill criteria are:

Q. ... [W]hat are the elements of the Bradford-Hill Criteria?

A. Sure, so to my understanding of it is it's related to the, you know, the available information that, for, so an example of a neuropsychology expert, the available information that is used to formulate or support the opinion or the perspective, that's a general understanding.

Q. Other than that, you can't provide any further testimony about what the Bradford-Hill Criteria are, is that fair?

A. That's correct.

Ex. A, Vega Dep. Vol. I at 233:17-234:3. In fact, rather than admit he does not know what the Bradford-Hill criteria are, Dr. Vega instead offered meandering testimony that was simply incorrect.

Dr. Vega obviously did not reach a conclusion on causation by following any methodology, much less a proper one, since he could not articulate what a proper methodology is or even describe or list any of the Bradford-Hill criteria. District courts have excluded experts who have not addressed the Bradford-Hill criteria, or similar criteria, in addressing a causation inquiry. *In re Breast Implant Litig.*, 11 F. Supp. 2d 1217, 1233 n. 5 (D. Colo. 1998); *see also* REFERENCE

¹⁷ The Bradford-Hill factors are: (1) temporal relationship; (2) strength of association; (3) dose-response relationship; (4) replication of findings; (5) biological plausibility; (6) consideration of alternative explanations; (7) cessation of exposure; (8) specificity of association; and (9) consistency with other knowledge. REFERENCE MANUAL at 600.

MANUAL at 597-600; *Gannon* 571 F. Supp. 2d 615, 641 (E.D. Pa. 2007) (rejecting proposed general causation testimony where the plaintiff's experts failed to show that the Bradford Hill criteria had been met), *aff'd*, 292 F. App'x 170 (3d Cir. 2008); *Miller v. Pfizer, Inc.*, 196 F. Supp. 2d 1062, 1069 (D. Kan. 2002) (excluding general causation testimony of expert who misapplied or failed to address Koch's postulates, a set of criteria comparable to the Bradford-Hill criteria), *aff'd*, 356 F.3d 1326 (10th Cir. 2004).

Finally, experts are not permitted to simply "parrot" the opinions of other experts. *Hill*, 2012 WL 5258753, at *4. An expert cannot merely rely on the analysis and opinions of another expert without examining the underlying data himself. *See Metropolitan St. Louis Equal Hous. Opportunity Council v. Gordon A. Gundaker Real Estate Co.*, 130 F. Supp. 2d 1074, 1088 (E.D. Mo. 2001) (excluding expert testimony because the expert tried to rely on data sets collected by others without reviewing them to ensure accuracy). When an expert bases his opinion on the unreliable opinions of another expert, then his opinion is also unreliable. *See Junk*, 628 F.3d at 449 (finding that an expert's opinion was properly excluded when it relied on the excluded opinion of another expert). Dr. Vega did no analysis or research of his own regarding lead's effect on cognitive function. Rather, in his reports, he relies entirely on Dr. Bellinger's report and his conclusions on general causation. *See Ex. F, Vega G.S.A.Y. Report 2/18/2019 at 16* ("[Plaintiff's] neuropsychological sequelae and resultant impairments in cognitive, academic, behavioral, and emotional functioning identified in the current evaluation are consistent with the known consequences of children exposed to lead, which are well documented by epidemiological studies published in the medical literature, and are described in more detail by Dr. David Bellinger in his report."). Not only is this improper, but as shown in Defendants' Motion to Exclude Dr. Bellinger's

Testimony, Dr. Bellinger's own methodology suffers from serious flaws, and his opinions should be excluded or limited.

3. Dr. Vega did not employ a proper methodology in arriving at his specific causation opinions

Moving from general to specific causation, it is well established that undertaking a thorough and reliable differential diagnosis is key to determining specific causation. *Kudabeck v. The Kroger Co.*, 338 F. 3d 856,862 (8th Cir. 2003). Such a diagnosis requires that the expert analyze all potential causes of an injury and then rule out the least likely until the most probable cause of injury can be identified. "The reliability of a specific causation opinion requires the proffered expert to consider and rule out other likely causes of the plaintiff's alleged ailment, i.e., to perform a proper differential diagnosis." *Simon v. Select Comfort Retail Corp.*, No. 4:14-CV-1136 JAR, 2016 WL 160643, at *5 (E.D. Mo. Jan. 14, 2016). "A differential etiology rules in plausible causes and then systematically rules out less plausible causes until a most plausible cause emerges. A medical causation opinion based upon proper differential etiology 'is acceptable causation testimony under *Daubert*.'" *Kirk*, 887 F.3d at 392 (8th Cir. 2018) (quoting *Johnson v. Mead Johnson & Co., LLC*, 754 F.3d 557, 560 n.2 (8th Cir. 2014)). However, "[w]hen an expert's differential analysis fails to rule in exposure to the alleged cause at issue (general causation) and fails to rule out other possible causes, the specific causation opinion is not sufficiently reliable and should be excluded." *Id.* (citing *Bland v. Verizon Wireless, LLC*, 538 F.3d 893, 897–98 (8th Cir. 2008) (emphasis in original)).

The Eighth Circuit has cautioned that the medical community and legal community have different understandings of what a proper "differential diagnosis" entails. *See Turner v. Iowa Fire Equip. Co.*, 229 F.3d 1202, 1208 (8th Cir. 2000). While in medicine a "differential diagnosis" means "a systematic comparison of symptoms to determine which of two or more **conditions** is

the one from which a patient is suffering,” *id.* (citing STEDMAN’S MEDICAL DICTIONARY 474 (26th ed. 1995)) (emphasis in original), legally, it means “a technique to identify the *cause* of a medical condition by eliminating the likely causes until the most probable cause is isolated.” *Scott v. Dyno Nobel, Inc.*, No. 4:16-CV-1440 HEA, 2021 WL 1750238, at *7 (E.D. Mo. May 4, 2021) (emphasis in original) (ruling that expert’s causation opinion was inadmissible based on “his failure to properly consider and rule out other possible causes of [Plaintiff’s] injuries”).

In *Rucker v. Drake*, the court held that a neuropsychologist’s causation testimony was inadmissible, in part, because it went beyond the scope of the neuropsychologist’s qualifications and because she did not demonstrate that she had conducted a valid differential diagnosis:

Although Dr. Carusa avers in her affidavit that she considered and excluded all possible causes of [plaintiff’s] current cognitive deficits except for the boat accident ... there is no presentation, either in her expert report or in her affidavit, that Dr. Carusa systematically ruled in all scientifically plausible causes of [plaintiff’s] cognitive deficit, and then ruled out “the least plausible causes of injury until the most likely cause remains.”

No. 4:00-CV-1369, 2001 WL 36095910, at *3 (E.D. Mo. Dec. 13, 2001) (quoting *Glastetter*, 252 F.3d at 989); *see also Clausen v. M/V New Carissa*, 339 F.3d 1049 (9th Cir. 2003) (“A district court is justified in excluding evidence if an expert ‘utterly fails ... to offer an explanation for why the proffered alternative cause’ was ruled out”). The Eighth Circuit has noted that while “it may be that this sort of reasoning could pass muster in some cases where the obvious result explains the etiology (for example, where a fractured bone accompanied by bruised skin and flesh demonstrate that some type of physical contact caused the injury), such reasoning cannot apply here where several possible causes could have produced one effect.” *Sorensen by and through Dunbar v. Shaklee Corp.*, 31 F.3d 638, 649 (8th Cir. 1994).

Dr. Vega even recognizes that to assess whether exposure to something like lead causes a particular neuropsychological problem, one must assess and rule out other possible etiologies of

the condition and that this includes an analysis of a variety of different data points, including medical history, academic history, etc. Ex. A, Vega Dep. Vol. I at 227:21-229:1. Further, Dr. Vega testified that the purpose of a differential diagnosis is to rule out other possible explanations for an individual's conditions, and he acknowledges that there are a number of factors that may affect an individual's cognitive ability and function, including family history of disease or learning disability, abuse, socioeconomic status, genetics, and educational background. Ex. L, Vega Dep. Vol. III at 841:14-17; Ex. A, Vega Dep. Vol. I at 98:1-100:5. Even Plaintiffs' general causation expert, Dr. Bellinger, acknowledges the importance of such other factors on cognitive development, all of which account for a greater impact than lead exposure. Ex. Q, Bellinger and Rappaport, *Developmental Assessment and Interventions*, in MANAGING ELEVATED BLOOD LEAD LEVELS AMONG YOUNG CHILDREN 79, 83 (Brit Harvey ed., 2002).

Indeed, as courts in this Circuit have reasoned, “[a] differential diagnosis that fails to take serious account of other potential causes may be so lacking that it cannot provide a reliable basis for an opinion on causation.” *Korte v. Mead Johnson & Co.*, 824 F. Supp. 2d 877, 897 (S.D. Iowa 2010) (emphasis added). And as the Eighth Circuit has held, an error occurs when “[i]nstead of reasoning from known facts to reach a conclusion, the expert[] . . . reason[s] from an end result in order to hypothesize what needed to be known but what was not.” *Sorensen*, 31 F.3d at 649.

Yet Dr. Vega failed to conduct a proper differential diagnosis in arriving at his specific causation opinions for Plaintiffs. In essence, Dr. Vega cannot “show his work” or explain how he assessed the potential causes of Plaintiffs’ alleged cognitive and behavioral injuries and systematically ruled them out to arrive at lead exposure as the most likely cause. For example, he does not discuss anywhere in his reports the other factors impacting cognitive development in relation to Plaintiffs’ cognitive and behavioral function. Nor does Dr. Vega even mention in his

reports that he considered these other factors, even though he acknowledged they can (and do) impact cognitive function. But in his deposition, he prevaricated on this point, stating that anything about an individual Plaintiff's history, family situation, socioeconomic status, etc. that he did not mention in his reports he had actually considered and simply deemed it "noncontributory." Ex. L, Vega Dep. Vol. III at 868:25—870:11. Dr. Vega, however, offered no explanation in his reports or deposition as to how he actually assessed these specific factors and ruled them out as "noncontributory" for each Plaintiff. An expert's bare assertion that he considered and excluded other potential causes is not sufficient to render the differential diagnosis admissible.

In fact, Dr. Vega cannot explain how he "considered" other relevant factors, because it is clear from his testimony that in reaching his opinions he, in fact, *did not* consider—or deliberately chose to ignore—numerous factors that are generally recognized as having a significant impact on neurocognition and behavior. A few examples include:

- Dr. Vega admitted that verbal or physical abuse could have a "negative impact" on both behavior and academic performance and acknowledged that G.S.A.Y. reported being "afraid" of his father, but did not include a discussion of this in his report and was unaware of whether there was additional information regarding abuse for this Plaintiff. *Id.* at 814:8-815:2; *see generally*, Ex. F, Vega G.S.A.Y. Report 2/18/2019.
- Dr. Vega did not recall that M.X.O.R. testified that her concerns about whether her mother can provide for her family distracts her from her schoolwork. And he made no mention of how her mother's physical and mental health problems could affect M.X.O.R. Ex. R, 5/11/2019 Deposition of Dr. Clemente Vega, Psy.D., Vol. IV ("Vega Dep. Vol. IV") at 1053:1-21; *see generally* Ex. S, Expert Report of Dr. Vega for M.X.O.R. ("M.X.O.R. Report") 2/18/2019.

- Dr. Vega acknowledged that exposure to secondhand smoke could have an impact on cognitive development, and yet, despite testimony regarding J.R.E.L.’s exposure to secondhand smoke in the home, Dr. Vega makes no mention of it in his report. Ex. R, Vega Dep. Vol. IV at 1114:23-1115:1; 1116:13-24; *see generally*, Ex. B, Vega J.R.E.L. Report 2/18/2019.
- R.A.Y.A. testified that the reason she had to repeat second grade was because of her parents’ separation. While Dr. Vega notes that R.A.Y.A. repeated second grade in his report, he makes no mention of the potential impact of her home life on her school work or attendance and instead indiscriminately attributes her retention in second grade to learning difficulties. Ex. G, Vega Dep. Vol. II at 687:13-17, 688:20-689:4; Ex. T, Expert Report of Dr. Vega for R.A.Y.A. (“Vega R.A.Y.A. Report”) 2/18/2019 at 3.
- Although Dr. Vega admits that socioeconomic status and home environment are important factors in assessing an individual’s IQ, he did not inquire of the Plaintiffs as to their physical home environment—i.e., whether they have dirt floors, how crowded the home is, etc. Ex. G, Vega Dep. Vol. II at 714:20-715:14, 716:5-9.

Dr. Vega also did not reevaluate any of his prior opinions based on Dr. Morote’s extensive findings highlighting Plaintiffs’ successes both academically, personally, and professionally. Ex. U, 7/24/2020 Rebuttal Deposition of Dr. Clemente Vega, Psy.D.(“Vega Rebuttal Dep.”) at 44:22-45:3. Such cherry-picking is the antithesis of proper scientific method. *See Barber v. United Airlines, Inc.*, 17 Fed. Appx. 433, 437 (7th Cir. 2001) (“Because in formulating his opinion Dr. Hynes cherry-picked the facts he considered to render an expert opinion, the district court correctly barred his testimony because such selective use of facts fails to satisfy the scientific method and *Daubert*.”).

In sum, Dr. Vega's specific causation opinions are based on searching for and finding data points to support his preconceived notion that lead exposure caused Plaintiffs' neuropsychological and behavioral deficits. He actually said as much in his report: "[Plaintiff's] medical history is notable for exposure to lead in early childhood; therefore, results from this evaluation will assist in determining whether he is currently experiencing any neurobehavioral effects consistent with lead exposure." Ex. F, Vega G.S.A.Y. Report 2/18/2019 at 1. He admitted that the blood lead levels provided a strong hypothesis for "the entire profile" before he conducted his evaluations and purportedly found deficits, "so I had the blood lead levels of a number of, of the plaintiffs while I was, before I did the, the evaluations, *so at that point there's a strong hypotheses on one of the possible explanations for the entire profile...*" Ex. A, Vega Dep. Vol. I at 183:11-15 (emphasis added)). In fact, when asked whether he could identify a single neuropsychological symptom that was not caused by lead in any Plaintiff, he responded that: "[t]he plaintiffs in this case have a very high level of lead exposure and that's associated with cognitive impairments... The short answer is no." Ex. R, Vega Dep Vol. IV at 1099:3-14.

Dr. Vega approached his assignment with a predetermined opinion that Plaintiffs had suffered cognitive and behavioral deficits because of lead exposure. He conducted his analyses and evaluations with that final opinion already settled in his mind. He cherry-picked the data that supported his opinion and failed to consider any of the significant factors that would tend to go against it. This is not proper scientific methodology, and his causation opinions are thus unreliable and inadmissible.

C. Dr. Vega's Opinion That It Was Specifically Emissions From "Defendants' Operations" That Caused Plaintiffs' Conditions Is Pure *Ipse Dixit*

Dr. Vega not only intends to testify that lead exposure caused Plaintiffs' injuries, but that it was specifically exposure to lead from DRP's operations of the Complex. *See, e.g.*, Ex. F, Vega

G.S.A.Y. Report 2/18/2019 at 16. Even if the Court permits Dr. Vega to testify that lead exposure caused Plaintiffs' alleged cognitive and behavioral deficits, he should certainly not be permitted to testify that lead emissions specifically from "Defendants' operations" of the Complex caused any such injuries. Dr. Vega simply has no qualifications whatsoever to offer an opinion about the particular source of lead that caused a person's injuries. He admittedly has no expertise in toxicology, environmental contamination, smelting operations, air modeling, or evaluation of environmental contamination. Ex. A, Vega Dep. Vol. I at 91:5-92:17. And he never endeavored in his own practice to identify the manufacturer of the lead-containing paint to which his three patients had been exposed; indeed, Dr. Vega acknowledged that this did not matter to his assessment. *Id.* at 68:2-69:22.

Dr. Vega also lacks any knowledge about DRP's operation of the Complex that would enable him to provide expert testimony that Plaintiffs' exposures were attributable to the Complex generally, or to DRP's operations specifically. He undertook no analysis for reaching such an opinion and, indeed, knows nothing about DRP's operations other than what is contained in a handful of company documents selected and provided by Plaintiffs' counsel. Dr. Vega has no knowledge of Defendants, who they are, who owned or operated the Complex, and how Defendants interrelate to be able to opine reliably that "Defendants' operations" caused Plaintiffs' injuries. *Id.* at 135:8-15. He admittedly knows nothing about the history of the Complex's operations:

Q: Other than there being emissions from the smelting facility, do you know anything ... else about the details of the operation of the plant on a day-to-day basis?

A: No.

* * *

Q: Do you know anything about the operation of the facility prior to October of 1997?

A: So in one of those reports there's mention of the, a company called Centromin that was where Doe Run purchased—who they purchased it from, I don't know if you say who, because it's a company, but you know what I mean. So I know that.

Q: Do you know anything about how long Centromin operated the plant?

A: No.

Q: Do you know anything about the details of Centromin's operations of the plant?

A: I do not.

Id. at 139:19-23; 139:25-140:13.

Further, Dr. Vega has not employed any methodology – let alone a reliable one – by which he could possibly attribute Plaintiffs' lead exposure to operations that specifically occurred during the time DRP owned and operated the Complex (October 1997 - June 2009). Dr Vega concedes that the bases for his opinion that lead emissions from Defendants' operations directly contributed to cause Plaintiffs' health problems merely comes from the information contained in Dr. David MacIntosh's and Dr. Jill Ryer-Powder's reports. *Id.* at 143:12-20.

Dr. Vega concedes that there are other sources of lead in the community to which Plaintiffs could have been exposed, including leaded gasoline, pottery, and emissions from the Complex that pre-date DRP's acquisition. *Id.* at 164:8-24. He, however, conducted no analysis as to the potential impact of lead from other sources in the community or from historical contamination attributable to operators of the smelter before DRP. *Id.* at 143:12-20, 151:22-152:13. Dr. Vega also acknowledges that those types of analyses are ***“just not, not what I do,”*** belying any notion that he is at all qualified to opine as to the source of lead exposure at it pertains to these Plaintiffs. *Id.* at 152:9-13. Admittedly, he did no analysis to quantify what percentage of Plaintiffs' neuropsychological deficits may be attributed to DRP's operation of the smelting facility as opposed to another source: “So that, you're asking me if I've done something that's impossible, so I so ... I did a calculation of what it would be expected from a different source based on the

data in a different study and what they presented, and that provides sort of a starting point So I did it in a particular way, not in the way that you want me to do it I guess” *Id.* at 170:1-171:3. But if he did actually do any such analysis, there is nothing in his reports to corroborate it:

Q: ...And you would agree with me that there’s no analysis in your report quantifying the percentage of plaintiffs’ health problems that are associated with defendants’ operations or the emissions from there?

A: There’s not nothing in the report that states that, that’s correct.

Id. at 171:6-12. Further, Dr. Vega concedes that he cannot say one way or another whether the lead emitted before DRP’s ownership of the smelter facility, alone, was sufficient or insufficient to cause the neuropsychological deficits allegedly suffered by the Plaintiffs. *See* Ex. R, Vega Dep. Vol. IV at 1087:7-1090:11. Accordingly, Dr. Vega’s opinion that Plaintiffs’ exposure to lead— attributable to Defendants—caused their injuries is based on insufficient data, and it is unreliable and inadmissible.

D. Dr. Vega’s “Recommendations” For Each Plaintiff Are Impractical and Irrelevant

When determining the relevance of an expert’s testimony under *Daubert*, courts assess “whether the proposed expert sufficiently connected the proposed testimony with the facts of the case.” *Lauzon*, 270 F.3d at 687. But the “Recommendations” Dr. Vega includes in each of his reports for the 16 Plaintiffs concerning academic and behavioral support do not in any way “fit” the facts of this case as required by *Daubert*. His own testimony demonstrates that his recommendations are entirely meaningless and impractical for Plaintiffs and their particular circumstances. Moreover, they have not, in any way, been communicated to Plaintiffs or their parents for potential implementation. As a result, these opinions are wholly unhelpful to the jury, irrelevant, and inadmissible.

For example, Dr. Vega recommended stimulant medications for some Plaintiffs but

acknowledged that “I don’t know if everyone has access to that medication.” Ex. A, Vega Dep. Vol I at 122:1-13. He recommended several web-based math programs for one Plaintiff, but later admitted that the same Plaintiff did not have a computer in his home. *Id.* at 127:1-129:11. He even conceded, as he must, that the programs were not even used by schools in La Oroya:

Q: What is the, what is the usage rate for these programs, Odyssey Math, Investigations in Number, Data and Space, and Everyday Mathematics and Accelerated Math in La Oroya.

A: None.

Id. at 130:13-17.

Amazingly, Dr. Vega does not even know if the educational programs he recommended for Plaintiffs are available in *Spanish*. *See id.* at 130:9-20 (suggesting that “[s]ome may be”). Further, Dr. Vega also recommended a number of interventions for Plaintiffs that included being “allowed to take examinations in a separate, quiet place” with Plaintiffs’ existing schools providing additional “supportive instruction” and parents being “encouraged to implement additional support and instruction at home with a tutor or learning specialist with experience teaching in [the given] area.” *E.g.*, Ex. F, Vega G.S.A.Y. Report 2/18/2019 at 17-18. Yet, Dr. Vega has acknowledged that the schools in La Oroya “don’t really have much of a special education program.” Ex. A, Vega Dep. Vol. I at 129:4-11.

Dr. Vega has also not made any effort over the last several years to communicate these very specific recommendations to Plaintiffs directly or through their counsel—or even discussed particular ways to implement these recommendations with anyone at the educational institutions in La Oroya—and has no intention of doing so. *Id.* at 118:23-119:10. In fact, Dr. Vega testified:

Q: So you have certain recommendations about behavior management in the home that you believe would help [G.S.A.Y.], right?

A: Yes.

Q: Okay. What-but you, *you're not going to be able to do anything to help implement those*, right?

A: *That's correct.*

Q: Okay. You're not going to communicate them to anybody, other than the participants in the lawsuit, right?

A: That's correct.

Id. at 122:19-123:5 (emphases added).

The impracticality of the “recommendations” and Dr. Vega’s failure to follow up as to any of them demonstrates their futility to the jury.

E. Dr. Vega’s Opinions About the Impact of Lead Exposure On Plaintiffs Is Entirely Speculative

In each of his reports, Dr. Vega provides the results of the cognitive and neuropsychological tests he administered, which include a measure of the Plaintiff’s GIA. Dr. Vega, however, cannot explain how these numerical scores translate into *any practical impact* on any Plaintiff’s life. As an initial matter, Dr. Vega recognized that there is no way to establish what each Plaintiff’s GIA would have been without exposure to lead, and that it is “impossible” to quantify. Ex. L, Vega Dep. Vol. III at 892:13-18.

Beyond that, Dr. Vega’s opinions regarding the impact lead exposure had on Plaintiffs’ lives are extremely vague and speculative, and can be reduced to a statement that lead exposure made Plaintiffs’ cognitive function “worse” and had a “negative” effect:

A. The role of neuropsychology is to be able to provide the information with the degree of neuropsychological certainty. So based on what that means. I can tell you that his academic performance was impacted by his level of lead.

Q. To what extent?

A. To the extent that it did.

* * *

Q. Sure. *How did lead exposure impact [G.C.S.]’s academic performance?*

A. *In a negative way.*

Q. *How, how negative?*

A. *In a negative way, so it’s worse now than it would have been without it.*

Ex. A, Vega Dep. Vol. I at 297:14-298:4 (emphases added).

Dr. Vega’s opinions that educational and employment opportunities for Plaintiffs have been, or will be, negatively impacted by their lead exposure are entirely speculative. Dr. Vega admitted that he has not undertaken any formal analysis of the Peruvian educational system. He does not know the general attendance rates or enrollment rates for secondary school in Peru. *Id.* at 312:2-322:15. He does not know the graduation rate for secondary school in Peru. *Id.* He is not aware of a single Plaintiff that has failed to enroll in secondary school. *Id.* at 339:6-11. And he has no knowledge of the percentage of students in Peru who attend university or graduate from a post-secondary school. *Id.* at 325:10-327:17. Incredibly, Dr. Vega has done no analysis whatsoever to determine how Plaintiffs compare to the larger population of Peruvians in their educational or vocational pursuits before rendering these misguided opinions. *Id.* at 342:5-17.

When asked whether he could opine with any specificity regarding how Plaintiffs would be performing academically or with respect to employment if they had **not** been exposed to lead, his response was – “They’d be doing better.” *Id.* at 342:18-23. This is nothing but unsupported speculation as Dr. Vega has done no analysis or investigation and has no information to compare these individuals’ academic performance or employment prospects to that of the Peruvian population generally. Not only is his opinion based on insufficient facts, but it directly contradicts the evidence, which demonstrates that Plaintiffs have attended secondary school, and/or university, and/or obtained gainful employment across the board.

The absurdity of Dr. Vega’s opinions in this regard is demonstrated by his attempt to

support his opinions using the example of J.J.E.C., who is attending a university program in architecture:

- Q. Right. So instead of going to university, somebody might do what?
- A. So, for example, *there's someone who is attending a university in an architectural program, but that wasn't their first choice, they really wanted to become an engineer, and they failed out of engineering. So maybe that person would become an engineer because that's what they really wanted to do, and they have the cognitive ability to do that rather than settling for something that was less than what they wanted to do, which was architecture.*
- Q. So, so one of the plaintiffs, absent lead exposure, would be studying engineering, but because he or she was exposed to lead, he or she is studying architecture.
- A. You're asking me what would be different –
- Q. Yeah.
- A. -- if they were going to university, and my answer is that going to university is one thing, being able to go to university and study a particular topic that is more challenging than another, that's a different, that is what I'm making the comparison for.
- Q. Sure.
- A. As an example.
- Q. Is engineering a more challenging academic field in Peru than architecture?
- A. So the, the inference that can be made from somebody's ability to get into and perform in an architecture school that doesn't, is unable to do that in engineering is that engineering is a, has higher demands.

Id. at 342:24 -344:6 (emphasis added). Dr. Vega utilizes nothing more than circular logic to support his speculative opinions. As his testimony makes clear, he has done no analysis or investigation to determine whether any particular educational program in Peru is more challenging than another or the reasons this particular Plaintiff ended up in a different program.

Dr. Vega's qualifications as a neuropsychologist also do not allow him to speculate regarding the impact of lead exposure on Plaintiffs' educational and vocational opportunities when he cannot articulate what that impact was nor present any data or analysis to support those

opinions. Expert testimony is inadmissible if it is speculative, unsupported by sufficient facts, or contrary to the facts of the case. *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1057 (8th Cir. 2000); *see Weisgram v. Marley Co.* 169 F.3d 514, 519 (8th Cir. 1999) (holding that the district court abused its discretion in allowing an expert “free rein to speculate before the jury as to the cause of the fire by relying on inferences that have absolutely no record support No foundation was established for [the expert] to testify to the extent he did, and the court abused its discretion in allowing the jury to hear this testimony”). Dr. Vega’s opinions regarding the alleged impact of lead exposure on the Plaintiffs’ educational or employment pursuits are entirely speculative and unreliable and should be excluded.

IV. CONCLUSION

For the reasons stated above, the Court should exclude the proffered opinion testimony of Plaintiffs’ expert witness, Clemente Vega, Psy.D., under Rule 702 and *Daubert*.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 15th day of November, 2021, a true and correct copy of the foregoing was filed with the Clerk of the Court through the Court's CM/ECF system, which will affect service on all counsel of record by sending a Notice of Electronic Filing.

/s/ Geoffrey M. Drake